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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,408	10/30/2001	Zengjian Hu	42390P11917	9035

7590 05/23/2006

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EXAMINER

SKED, MATTHEW J

ART UNIT	PAPER NUMBER
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2626

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,408	HU ET AL.	
	Examiner	Art Unit	
	Matthew J. Sked	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 28-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/24/06 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 9 and 17 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 28-30 have been newly added.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2626

5. Claims 1, 3-5, 7-9, 11-13, 15-17, 19-21, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto et al. ("Using Suffix Arrays to Compute Term Frequency and Document Frequency for All Substrings in a Corpus").

As per claims 1, 9 and 17, Yamamoto teaches a method, system and a processor to execute instructions on a machine-readable medium comprising:

creating a suffix tree to determine the frequency of phrases within a text corpus (uses suffix arrays to calculate the term frequency of phrases in a document, introduction and section 2);

specifying a set of frequently occurring phrases (calculates the term frequency of the phrases hence all the terms in the suffix array would be a set of frequently occurring phrases, section 2); and

filtering the set of frequently occurring phrases to determine a set of frequently occurring and unrecognized phrases as entity name and jargon term candidates (once the set of phrases is established substrings with a term frequency less than 10 and names are extracted, sections 3.1 and 3.3).

6. As per claims 3, 11 and 19, Yamamoto teaches the text corpus is preprocessed (corpus is broken up into multiple input documents, Fig. 6).

7. As per claims 4, 12 and 20, Yamamoto teaches the text corpus is text of a human language (English and Japanese text, introduction).

8. As per claims 5, 13 and 21, Yamamoto teaches wherein the human language is Chinese (kanji words, section 3.2).

Art Unit: 2626

9. As per claims 7, 8, 15, 16, 23 and 24, Yamamoto teaches reducing the set of entity name and jargon term candidates by applying semantic rules (mutual independence rule picks out phrases with noncompositional semantics, introduction).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Applicant's admitted prior art.

Yamamoto teaches sorting the suffix array in alphabetical order (section 2.1).

Yamamoto does not specifically teach sorting in inverse lexicographical order.

Applicant's admitted prior art teaches that sorting in inverse lexicographical order is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Yamamoto to sort in inverse lexicographical order because it would decrease searching time.

12. Claims 6, 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Castellanos et al. (U.S. Pat. Pub. 2003/0014448A1).

Yamamoto does not teach wherein filtering the set of frequently occurring phrases includes comparing a component word of a phrase to a dictionary of common words and excluding the phrase from the set of entity name and jargon term candidates if the component word is a common word.

Castellanos teaches wherein filtering the set of frequently occurring phrases includes comparing a component word of a phrase to a dictionary of common words and excluding the phrase from the set of entity name and jargon term candidates if the component word is a common word (recognized phrases from the spell checker are placed in the reference word list, paragraph 30).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Yamamoto to compare a component word of a phrase to a dictionary of common words and excluding the phrase from the set of entity name and jargon term candidates if the component word is a common word as taught by Castellanos because it would ensure phrases that contain words in the vocabulary are not classified as a name or jargon term.

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Razin et al. (U.S. Pat. 6,098,034).

Yamamoto does not teach excluding a phrase from the set of frequently occurring phrases, wherein the phrase comprises a sub-phrase that occurs at a higher frequency than the phrase.

Razin teaches excluding a phrase from the set of frequently occurring phrases, wherein the phrase comprises a sub-phrase that occurs at a higher frequency than the phrase (nested phrases that occur sufficiently on their own are evaluated rather than the larger phrase, col. 17, lines 10-28).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Yamamoto to exclude a phrase from the set of frequently occurring phrases, wherein the phrase comprises a sub-phrase that occurs at a higher frequency than the phrase because as taught by Razin it would remove repetitiveness (col. 17, lines 10-28).

Allowable Subject Matter

13. Claim 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art on record teaches excluding an embedded phrase from the set of frequently occurring phrases, wherein the embedded phrase is embedded by an embedding phrase that occurs at a similar frequency with the embedded phrase. It would not have been obvious to one of ordinary skill in the art at the time of invention to modify the systems in prior art to arrive at the Applicant's invention.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jagadish et al. ("Substring Selectivity Estimation") teaches using count suffix trees for query processing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS
05/18/06


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